

Hartford

Your Health and Your Environment

What You Should Know



www.healthy.hartford.gov

Developed by the
University of Connecticut's Environmental Research Institute

In partnership with the
Hartford Health Department

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Overview

Hartford: Your Health and Your Environment, a Website of the Hartford Health Department, was developed to provide information on a broad range of environmental topics that affect the quality of life in the City of Hartford. This briefing book provides a guide to that Website. The goal of the Website and the briefing book is to offer an educational opportunity for Hartford residents and to encourage community participation in urban environmental public policy.

The Website and briefing book cover the following environmental issues that are of concern for Hartford residents:

- Lead poisoning
- Asthma
- Indoor air quality
- Outdoor air quality
- Open space
- Brownfields
- Environmental justice

Each section covers the basic background information, describes specific Hartford concerns and activities, and provides links for additional resources. The goal is not to cover every aspect of every topic, but to provide a broad overview of the problems as they relate to Hartford and to assist Hartford residents in gaining access to the relevant resources on the World Wide Web.

From the Mayor of the City of Hartford



In this new millennium, Hartford, like other major urban areas, faces numerous challenges and opportunities with respect to the health of its

environment, especially as it relates to the health of its residents.

Residents are concerned with environmental issues such as lead poisoning, asthma, outdoor and indoor air quality, open space, and brownfields. All of these issues may affect the quality of life in Hartford and the health and well-being of its residents. Together these topics fall under the umbrella of environmental justice—the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income—with respect to environmental issues.

To make informed decisions on all of these matters, we first need accurate and timely information. This Website and briefing book will provide comprehensive scientific information, presented in nontechnical language, on these critical environmental issues. It is intended to help educate the residents of Hartford and to encourage community participation in urban environmental public policymaking.

The City of Hartford is working to identify and tackle its environmental challenges. We believe this Website and briefing book will serve as an important tool to help residents understand and participate in this process.

Michael P. Peters

From the Director of the Hartford Health Department



In 1993 the Hartford Health Department made a long-term commitment to work towards improving public health in Hartford. Hartford's Community Health Partnership was

created as a collaboration of representatives from the three major Hartford hospitals, community-based organizations, city and state health departments, and the University of Connecticut School of Medicine. The partnership utilizes the rich and diverse resources of this broad-based membership to monitor and address public health in the City of Hartford. Examples of our activities include the Hartford Health Surveys of 1997 and 2000, the Hartford Community Health Profile, and calls to action in the areas of diabetes, asthma, and behavioral health.

The Website entitled *Hartford: Your Health and Your Environment* and this accompanying briefing book were developed by the Hartford Health Department, the University of Connecticut's Environmental Research Institute, and EPA New England's Urban Environmental Initiative with this commitment in mind and this notion of partnership. We are proud to offer to you a place where you will be able to obtain information about environmental issues that have a direct impact on the quality of life for city residents and about actions that are being taken to make substantial improvements.

I hope that you will find the Website and briefing book to be user friendly and that they will provide you with ongoing access to valuable information about our community. I encourage you to contact the Hartford Health Department at (860) 543-8800 with comments and suggestions.

Katherine McCormack

Lead Poisoning

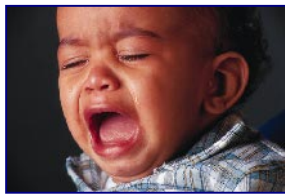
A Preventable Health Problem

Lead is a poison that affects nearly every system of the body. *No* amount of lead in the body is safe. Lead poisoning is a major environmental health issue today. Lead poisoning is also *preventable*. Strategies include:

- X Preventing lead poisoning at the source (eliminating lead hazards in the home, the environment, and the workplace)
- X Screening
- X Medical treatment

What does lead do to children?

Lead can cause permanent damage to children—especially unborn children, infants, toddlers, and children under six years old. It can damage the brain and other parts of the nervous system and can cause long-term behavior and learning problems. Children are generally at greater risk than adults because they are more sensitive to lead's damaging effects and because they put objects in their mouths. If these objects contain lead or have lead dust on them, the lead will poison the children and may stay in their bodies.



The effects of lead depend upon the level of lead in the blood. For example, in children, very high levels can cause coma, convulsions, and even (rarely) death. Moderate levels, too, can harm the brain and nervous system, kidneys, and liver. Even very low levels, which do not cause any obvious symptoms, are associated with decreased intelligence, behavioral problems, decreased growth, and impaired hearing.

The problems that lead causes remain long after childhood. In comparison with children who have not been exposed to excessive levels of lead, children who have been exposed are much more likely to have

- Reading difficulties
- Poor vocabulary
- Attention problems

- Poor coordination
- More school absences
- Lower class ranking
- Greater chance of dropping out of high school

How can you tell if someone has lead poisoning?

Children with lead poisoning may not look or act sick. Even if the children do show some signs of lead poisoning, these symptoms can often be mistaken for other illnesses, such as the flu. Many of the symptoms of lead poisoning may indicate other health conditions or learning and behavior problems. Adults, especially those who work in lead-related industries, are also at risk for lead poisoning.

Since people who are lead poisoned often show no symptoms, the only way to know for certain is through blood tests. The Connecticut Statewide Screening Committee recommends that all children between the ages of one and six years, especially children between the ages of one and two years, be screened. Children between three and six years old who live in high-risk housing or areas and have not yet been tested should also be screened. If any one person in the household is diagnosed with lead poisoning, all other members of the household should also be tested.

Family doctors and pediatricians can provide lead poisoning screening. Other agencies that may offer these services include local health departments, health clinics, Head Start programs, community health fairs, hospital pediatric outpatient departments, visiting nurse associations, and well-child clinics.

In Connecticut, a child is considered to have an elevated blood lead level if tests show between 10 and 20 micrograms of lead per deciliter (usually written as $\mu\text{g}/\text{dL}$) of blood. Any level above 10 $\mu\text{g}/\text{dL}$ requires careful follow-up. A child is considered lead poisoned if the blood lead level is 20 $\mu\text{g}/\text{dL}$ or higher. The higher the blood lead level, the more severe the health effects.

Reporting

Once a child has been tested, the laboratory must report all blood lead levels to the Connecticut Department of Public Health. If the level is 10 µg/dL or greater, it must be reported to the Department of Public Health and the Hartford Health Department within 48 hours. According to state law

- If the child's lead level is 10 µg/dL or above, the local health department must provide information to the parent or guardian regarding lead dangers, ways to reduce the risks of lead poisoning, and laws and regulations concerning lead abatement.
- If the child's lead level is 20 µg/dL or above, the health department must provide all of the above information, inspect the home for sources of lead exposure, and, if necessary, relocate the family (if housing is available).
- If a child's blood lead level is 20 µg/dL or above and lead hazards are found, the property owner receives an order to eliminate the hazard and has 45 days to begin work. If the child's blood level is below 20 µg/dL, the property owner is not required to act.

Where is lead in the environment?

Many houses and apartment buildings built before 1978 have paint that contains lead. Houses built before 1950 may contain paint that has a very high percentage of lead. (In 1978, the U.S. government banned lead-based paint in housing.)



As a result, the possibility of lead poisoning may be greater for children who live in or frequently visit older, deteriorating housing,

because children may eat paint chips and may eat or breathe in paint dust. Children who live in housing that was built before 1978 and that has recently been or is now being remodeled or renovated are especially at risk, because such home repairs, if they are not conducted in a lead-safe manner, can create lead dust that children may breathe in or swallow and paint chips that children may swallow. For information about lead-safe work practices, see <http://www.hud.gov/offices/lead/>.

Lead-based paint is especially common on old windows, doors, and porches and in old kitchens and bathrooms because it is durable and moisture resistant.

Lead can enter the air through lead-related industries, such as smelting, battery manufacturing, and radiator repair, and the burning of lead-painted items. Lead can enter household water from old pipes and solder. Although gasoline no longer contains lead, automobile exhaust from former years may have deposited lead in the soil around homes where people live and children play. Lead from industrial sources and old, deteriorated exterior paint may also have contaminated the soil.

Other sources of lead in the home may include:

- Lead brought home by workers in lead-related industries (such as construction, remodeling, or renovation)
- Some old or imported dishes
- Some folk medicines and cosmetics
- Some old painted toys or furniture
- Some imported miniblinds
- Some candles with metal wicks
- Ink on some printed plastic bags
- Some imported canned goods
- Some hobby items, such as batteries, bullets, and fishing sinkers

Why is Hartford at risk?



While all racial, ethnic, and economic groups are at risk of lead poisoning, the problem is particularly prevalent among people of color, urban, and low-income families. According to 1990 U.S. Census data, Hartford ranks first in Connecticut for the

following lead-poisoning risk factors:

- The greatest number of children under six years of age (14,245)
- The highest percentage of children living in poverty (46%, compared with a statewide average of 5%)

- The highest percentage of at-risk housing (91% built before 1978, and 52% built before 1950)

Where is lead poisoning treated in Hartford?

The Hartford Regional Lead Treatment Center is the only comprehensive lead poisoning treatment center for children in the Greater Hartford area. It is a collaborative effort among the Connecticut Citizen Research Group, Saint Francis Hospital and Medical Center, 114 Woodland Street, Hartford, CT 06105, (860) 714-4792, and the Connecticut Children's Medical Center, 282 Washington Street, Hartford, CT 06106, (860) 545-9333. The center serves all Hartford hospitals and offers consultations to area physicians.

Once children have been lead poisoned, they must be removed from the environment that contains lead. Permanent lead-safe housing is not always immediately available and affordable. To provide temporary lead-safe housing to families



of children with high lead levels while these children are being treated for lead poisoning, the center also operates the **Lead Safe House**, which

Lead Safe House offers five apartments in two buildings. Housing is available to residents of Hartford and surrounding towns. Contact: Lead Safe House, 115-117 Sigourney Street Hartford, CT 06105, (860) 525-2574.

What is Hartford doing to prevent lead poisoning?

The Hartford Health Department has a comprehensive program that focuses on primary prevention (acting before people are poisoned) and education. For additional information, contact Owen J. Humphries, Jr., Coordinator, **Lead Poisoning Prevention and Education Program**, Hartford Health Department, 131 Coventry Street, Hartford, CT 06112, (860)547-

1426 extension 7186, e-mail ohumphries@ci.hartford.ct.us.

Education and outreach programs include:

- Partnership with the Hartford Public Schools in implementing an innovative educational curriculum to teach second and third grade students about lead poisoning
- Poster contests
- Lead awareness training for daycare providers
- Educational outreach program for hardware and paint stores
- Other public awareness initiatives

The City of Hartford has received a \$2.5 million grant from the U.S. Department of Housing and Urban Development to conduct **lead hazard abatement** activities. By January 2001, the city had made some 150 housing units lead-safe under this program.

Home Solutions, a new program funded by the Connecticut Department of Economic and Community Development and administered by the Community Renewal Team (CRT), offers help with lead and asbestos abatement for residential owner-occupied and rental properties. The properties may be single-family or multifamily dwellings. For further information, call toll free: 877-254-6601.

In a typical year, some forty to sixty properties containing lead-related housing code violations are prosecuted in Connecticut's **Housing Court**. On average, 30% of these properties are brought back into compliance with the housing code.

What remains to be done?

- More children need to be screened.
- City residents—including children, parents or guardians, teachers, property owners, and policy makers—need to learn more about lead poisoning.
- Contaminated properties need to be identified and abated or taken down. Some current proposals include:
- Changes in city ordinances to require housing inspectors to check for lead-based paint when they respond to any complaint

from a tenant (such as no heat). The city would notify landlords of lead hazards and provide training to tenants in lead poisoning prevention

- Changes in state laws to provide funding for landlords who perform lead abatement in housing where low-income children with blood lead levels of 10-19µg/dL live.
- Affordable, lead-safe housing needs to be made available.

Where can I go for more information?

Additional information, including information about federal, state, and local government laws and regulations, is available online.

City resources

- Hartford Health Department, Lead Poisoning Prevention and Education Program, 131 Coventry Street, Hartford, CT 06112, 860-543-8817 (phone), 860-722-6719 (fax), <http://199.105.73.50/lead.htm>
- Hartford Public Library, 500 Main St., Hartford, CT 06103, 860-543-8628, <http://www.hartfordpl.lib.ct.us/>

State resources

- Connecticut Department of Public Health , http://www.state.ct.us/dph/BRS/lead/lead_program.htm

Federal resources

- U.S. Environmental Protection Agency www.epa.gov/lead
- U.S. Environmental Protection Agency, Office of Children's Health www.epa.gov/children
- U.S. Environmental Protection Agency, Urban Environmental Initiative (UEI). Contact: Stacey Johnson, Hartford City Program Manager, (617) 918-1552 or <http://www.epa.gov/region01/eco/uei/index.html>
- U.S. Department of Housing and Urban Development www.hud.gov/lea/leahome.html
- For additional maps, see <http://www.hud.gov/emap/>
- U.S. Centers for Disease Control and Prevention www.cdc.gov/nceh/lead/lead.htm
- U.S. Centers for Disease Control and Prevention, National Center for

Environmental Health

<http://www.cdc.gov/nceh/ncehome.htm>

- U.S. Occupational Safety and Health Administration www.osha-slc.gov/SLTC/lead/index.html

National Lead Information Hotline, 1-800-424-LEAD

Other resources

- For a list of State-certified lead professionals (people who can perform lead hazard screenings, lead inspections, or lead risk assessments), call 1-888-LEADLIST or click on www.leadlisting.org.
- Alliance to End Childhood Lead Poisoning www.aecclp.org
- Lead-Safe America Campaign www.lead-safeamerica.net
- National Center for Lead-Safe Housing www.lead-safehousing.org
- National Lead Information Center, Environmental Health Center <http://www.nsc.org/ehc/lead.htm>

Asthma

An Unexplained Epidemic

Asthma is a chronic lung disease in which a person's bronchial tubes (airways) become swollen, and extra mucus (a thick, slippery, sticky fluid) blocks air from getting to the person's lungs. During an asthma episode or attack, the person may cough, wheeze, gasp for breath, and experience chest pain or tightness. Asthma attacks are most common in the early morning and at night. Asthma ranges from mild to life-threatening.

While asthma cannot be cured or prevented at this time, asthma can be managed, and many asthma attacks, hospitalizations, and deaths may be preventable. Proper medical management and the reduction or elimination of environmental asthma triggers, such as tobacco smoke, dust, and mold, can help to reduce the impact of asthma.

Why is asthma a major health problem?

Asthma is widely considered an epidemic in the United States today. Asthma rates are rising for all age groups, within and outside urban areas, regardless of race, income, and region of the country. Asthma currently affects an estimated 17 million Americans, and according to the Pew Environmental Health Commission that number could reach 29 million by the year 2020. It is the number one chronic disease of children.

Doctors are not sure why asthma is increasing so dramatically. This rise is seen despite better understanding of the disease and better medications for treating it.

Economics

The financial costs of asthma are very high. The disease costs the nation more than \$11 billion per year for health care and lost productivity, of which more than \$1 billion comes from Medicaid and Medicare. By 2020, the total costs could reach \$18 billion, with \$2 billion coming from Medicaid and Medicare. In Connecticut, asthma hospitalizations cost some \$171 million in 1996.

Family and social costs

In addition to the medical costs, asthma has enormous social and emotional costs. It affects the quality of life, keeping children out of school and adults out of work. It may limit occupational choices and physical activity. When asthma is not well managed, patients and their families often feel that asthma controls them, rather than the reverse. The feelings of anxiety and fear associated with asthma attacks, though they may not be quantifiable, may be deeply disturbing.

Who is affected by asthma?

Although asthma often begins in childhood, anyone can develop asthma at any age. However, the burden of asthma falls disproportionately on children, poor people, and people of color.



What causes asthma?

Doctors do not know exactly what causes asthma to develop in the first place. However, they do know that the disease is linked to both inherited factors (genetics) and environmental factors, especially indoor and outdoor air pollutants and substances that set off allergic reactions (allergens). Interactions between genetic and environmental factors in early childhood may be particularly important.

Social and economic factors, such as poverty, access to medical care, housing quality, and nutrition, which interact with genetic and environmental factors, make the problem even more complicated. Other potential factors may include respiratory viral infections in early childhood, vaccines that may suppress immune responses, an increase in time spent indoors, lack of breast feeding, and obesity.

What are asthma triggers?

Asthma triggers are things that can cause or worsen (exacerbate) asthma attacks. Every person with asthma has different asthma triggers. What triggers an attack in one person may not trigger it in someone else. However, everyone especially those with asthma, should avoid irritants (like tobacco smoke), but only those who are sensitive to specific allergens need to avoid those allergens.

Asthma triggers include:

- **Allergens**, which set off allergic reactions in individuals who are sensitive to those substances. Allergens include indoor substances (such as dust mites, molds, and pet dander) and outdoor ones (pollens and mold spores).
- **Irritants**, which provoke or worsen asthma attacks in all people with asthma. Irritants include indoor substances (tobacco smoke, aerosol sprays, and perfumes) and outdoor ones (automobile exhaust and gasoline).

In children under 5 years old, viral respiratory infections are the number one asthma trigger.

Indoor Triggers	Ways to Avoid in Your Home
Drugs, such as aspirin and heart medicines	Talk to your doctor about alternative medications
Dust and particles in the air	<ul style="list-style-type: none"> • Clean as frequently as possible • If one person in the family has asthma, dust and clean when that person is not at home • If possible, don't vacuum; instead, damp mop • If you have to vacuum, use a high efficiency filter to trap dust and allergens in the exhaust • Dust with a damp cloth • Use washable curtains and window shades
Dust mites (very tiny creatures that live in bedding,	<ul style="list-style-type: none"> • If possible, remove carpeting • Put dust-proof covers

Indoor Triggers	Ways to Avoid in Your Home
clothes, stuffed toys, carpets, and fabric-covered furniture)	(allergen-impermeable) on mattresses and pillows <ul style="list-style-type: none"> • Wash sheets and blankets once a week in hot water • Wash stuffed toys often in hot water, and keep them off beds
Household products, such as cleaners, sprays, liquid chlorine bleach, paint, perfumes, talcum powder	<ul style="list-style-type: none"> • Avoid as much as possible • Use alternative products when necessary
Molds and fungi	<ul style="list-style-type: none"> • Fix sources of water problems, such as leaky plumbing • Clean surfaces often • Try to keep down moisture, especially in kitchens and bathrooms
Pests, such as cockroaches, rats, and mice	<ul style="list-style-type: none"> • Don't leave food or garbage out • Store food in airtight containers • Clean up spilled food and crumbs immediately • Use poison bait or traps. Always follow label instructions carefully.
Pets with fur or feathers: dander (tiny flakes of skin, hair, or feathers), urine, and saliva: dogs, cats, birds, rodents (such as mice, gerbils, and rabbits)	<ul style="list-style-type: none"> • If possible, wash pets frequently • Keep pets out of the bedrooms, and keep bedroom doors closed • Keep pets away from upholstered furniture, carpets, and stuffed toys • Consider keeping pets outside • If a pet still causes severe asthma attacks, you may need to find a new home for it

Indoor Triggers	Ways to Avoid in Your Home
Some foods: nuts, and peanut butter, chocolate, eggs, shellfish, sulfites (a preservative in some foods)	<ul style="list-style-type: none"> • Avoid foods that trigger asthma attacks • Read ingredients list of packaged foods carefully
Tobacco smoke: cigarettes, cigars, pipes	<ul style="list-style-type: none"> • Do not smoke or allow smoking in the house • If someone in the house continues to smoke, open windows and use fans to blow smoke outside. • Do not allow smoking in child's bedroom.

In your workplace:

- Talk to your employers about getting rid of any triggers (for example, dust or chemicals).

In school:

- Talk to your children's teachers about getting rid of any triggers in the classroom, such as pets and chalk dust
- See whether your school has implemented EPA's *Tools for Schools* Program, a national program to improve indoor air quality in schools.

In public places:

- Avoid smoke-filled rooms.
- Ask to be seated in the nonsmoking section in restaurants.

How does smoking affect asthma?

Both smoking itself and breathing secondhand smoke (sometimes called environmental tobacco smoke, or ETS) are especially dangerous.

Tobacco smoke contains particles and gases that can cause many respiratory problems-including asthma. More than 4,000 substances, many of which are strongly irritating to the lungs, have been identified in tobacco smoke.

Children are more susceptible than adults to the harmful effects of tobacco smoke.

Children of smokers are twice as likely to develop asthma as are children of nonsmokers.

Children whose mothers smoke heavily have more severe asthma symptoms.

When pregnant women smoke, the cigarette chemicals block the unborn baby's airways and may result in premature birth. After the baby is born, breathing smoke can make their small airways become even smaller. These babies may be more susceptible to respiratory problems later in life.



Outdoor Triggers	Ways to Avoid
Allergens: molds, pollens	<ul style="list-style-type: none"> • If possible, stay indoors when pollen counts are especially high • Keep windows closed and use air conditioning, if it is available • If you are driving when there is a lot of mold or pollen outside, keep the car windows shut and use air conditioning, if it is available • If you do go outside, take a shower and change your clothes when you come inside again
Gases or particles in the air: auto or bus exhaust, ozone, sulfur dioxide	<ul style="list-style-type: none"> • If possible, stay indoors when there is a lot of air pollution outside.
Changes in weather: cold air	<ul style="list-style-type: none"> • Try to avoid outdoor exercise, especially if it involves a sudden drop in temperature • Talk to your doctor about alternative forms of exercise

For some people, asthma triggers can also include illnesses and other factors that are not environmental.

Other Triggers	Ways to Avoid
Respiratory illnesses: common cold, flu, influenza	<ul style="list-style-type: none"> • Wash hands often • Talk with your doctor about getting flu shots
Hard exercise	<ul style="list-style-type: none"> • Avoid outdoor exercise in cold weather • Talk to your doctor about alternative forms of exercise, such as yoga
Emotional stress or excitement	<ul style="list-style-type: none"> • Learn stress management techniques • Pay attention to your feelings

Asthma symptoms are often worse at night, and they can also become worse in particular seasons throughout the year. In Connecticut, the number of patients who go to the hospital for asthma increases during the fall and decreases during the summer. This pattern may have to do with an increase in allergens such as molds and spores in the fall, as well as with an increase in indoor pollution from wood-burning stoves, fireplaces, and gas and oil furnaces.

How is asthma treated?

Although some people outgrow asthma, for most people, it is a lifelong disease, which cannot be cured. However, asthma can be controlled. If you have asthma, you can live a normal life and do the same things as people without asthma.

- Talk to your doctor about ways to control your asthma.
- Take the medicines your doctor prescribes.
- Always follow the doctor's directions carefully.
- Identify your asthma triggers.
- Eliminate as many environmental asthma triggers as possible.
- Monitor your asthma.

How can schools assist children with asthma?

Asthma is the number one cause of school absences attributable to chronic illness. Some 6 million children under the age of 18 have asthma.

These children miss approximately 10 million school days per year.

Schools can help children with asthma to control their illness and to participate fully in school activities.

1. Schools should be free of tobacco smoke at all times, including all school-sponsored events.
2. Schools should maintain good indoor air quality.
3. A school nurse should be available whenever students are present in school.
4. Children should be able to take medicines at school as recommended by their doctors and parents.
5. The school should have an emergency plan to take care of a child who is having a severe asthma episode or attack.
6. The school should ensure that school staff learn about asthma, asthma management plans, and asthma medicines. The school should also ensure that all students, not just those with asthma, learn about the problem and how to help classmates who have it.
7. Students with asthma should have ways to participate fully and safely in physical education classes and recess.

For additional information, see the EPA's *Tools for Schools* program. Contact: atesta@alact.org, connecticosh@snet.net, or kenny.foscue@po.state.ct.us.

What is occupational asthma?

Occupational asthma is caused by dusts, vapors, gases, or fumes in the workplace. These substances trigger allergic reactions in susceptible workers. If people have a choice, they should be cautious about taking a job that will expose them to many potential asthma triggers.

What is the asthma problem in Hartford?

Unlike lead poisoning, asthma is not a disease that must be reported to city or state health departments, so statistics are not as readily available, and researchers have reported different findings.

A 2000 survey by the Hartford Health Department found that 15% of adults reported

that they had asthma. Among households surveyed, 33% reported that at least one household member had asthma. Reported asthma rates varied by race/ethnicity and income in this survey.

Hartford Health Survey 2000 Reported Asthma Rates	
<i>By race/ethnicity</i>	
Hispanic households	50%
Black (African American, Caribbean/ Virgin Islander) households	30%
Non-Hispanic white households	20%
<i>By economic status</i>	
Households in poverty	44%
Other low-income households	32%
Higher income households	25%

What is Hartford doing about asthma?

The **Easy Breathing Project** is an asthma management program that is open to all children who live in or receive their medical care in Hartford. It provides quality asthma care and education to Hartford's children with asthma. Contact: Michele Cloutier, M.D., Connecticut Children's Medical Center, 282 Washington Street, Hartford, CT 06106, (860) 545-9000, mclouti@ccmckids.org.

The **American Lung Association of Connecticut** offers referrals, information, a speakers bureau, a preschool program for childcare providers, a school-based asthma management program for children, a medically supervised summer camp for children with asthma, Olympics games for children with asthma, and professional conferences for healthcare workers. Contact: American Lung Association of Connecticut, 45 Ash Street, East Hartford, CT 06108, 1-800-LUNG USA, www.alact.org.

The **Hartford Environmental Justice Network**, composed of Hartford residents and grassroots community organizations concerned with environmental issues, has received EPA funding to educate city residents about possible connections between diesel emissions and asthma. Contact: Mark Mitchell, M.D., MPH, (860) 548-1133.

The **Hartford Regional Lead Treatment Center** has expanded its lead-poisoning efforts into a "healthy home" initiative, which serves children with severe asthma as well as children who have been lead poisoned. This program provides home visits and housing modifications or relocation for asthmatic children. With EPA support, it is enhancing its lead and asthma education and outreach efforts. Contact: Lisa Menillo, M.D., Saint Francis Hospital and Medical Center, (860) 714-5316.

The **EPA's Tools for Schools** program provides an action kit for schools to use to identify and address indoor air quality problems, including those that may be asthma triggers.

ConnectiCOSH (Connecticut Council on Occupational Safety and Health) has been awarded an EPA grant to recruit 25 new schools across the state for the *Tools for Schools* program.

The **University of Connecticut**, with EPA support is also developing an asthma intervention project in several Hartford public schools and examining the effectiveness of *Tools for Schools* in reducing health problems due to asthma triggers.

The **Connecticut School Indoor Environment Resource Team** is a group of federal, state, and nonprofit agencies that can help Connecticut schools with *Tools for Schools* training, implementation, and technical issues. Contact: Donielle Wilson, ConnectiCOSH, (860)549-1877, or Kenny Foscue, Connecticut Department of Public Health, (860)509-7742.

Asthma Call to Action consists of representatives of the Hartford's Health Department, public schools, area hospitals, community organizations, and other agencies who are concerned about asthma in Hartford. Its goals are to

- Increase awareness about asthma among all residents of Hartford
- Promote standards of asthma care
- Provide a forum for information exchange among health care professionals

- Establish a network of organizations and individuals providing asthma education and resources
- Define feasible improvement strategies
- Activities have included education for children, parents, nurses, and doctors.

Contact: Rita Kornblum or Katherine McCormack, Hartford Health Department, (860) 547-1426.

Pediatric Asthma Coalition focuses on quality of life, cost, and access to care for children with asthma. Contact: Michele Cloutier, M.D., Connecticut Children's Medical Center, 282 Washington Street, Hartford, CT 06106, (860) 545-9000.

What remains to be done?

Given that knowledge of asthma is growing and that better medications are available, the rise in asthma is particularly troubling. It suggests that a better understanding of the causes of asthma, better environmental controls, changes in the health care system, more education, and adjustments in public policy are all needed to combat the problem.

In August 2000 the **Hartford City Council** declared an asthma emergency and requested a comprehensive, citywide policy to deal with asthma, including

- A multimedia, multilingual asthma education and outreach campaign, directed especially at those most at risk and their families
- An investigation by the Connecticut Department of Public Health and the U.S. Centers for Disease Control into why Hartford's asthma rate is so high and into ways to prevent asthma
- Monitoring of asthma rates in Hartford
- More screening to identify asthma in its early stages
- Encouraging accurate diagnosis, treatment, and self-management of asthma
- Full enforcement of environmental laws and regulations designed to protect lung health
- More public education about how recycling reduces trash burning and air pollution

Where can I go for more information?

- Allergy and Asthma Network Mothers of Asthmatics <http://www.aanma.org>
- Allergy, Asthma, and Immunology Online <http://www.allergy.mcg.edu>
- American Academy of Allergy, Asthma, and Immunology Online <http://www.aaaai.org>
- American Lung Association <http://www.lungusa.org>
- American Lung Association of Connecticut: <http://www.alact.org>
- Asthma and Allergy Foundation of America <http://www.aafa.org>
- Asthma Learning Lab <http://www.asthmalearninglab.com>
- Hartford Hospital <http://www.harthosp.org>
- Health-Track <http://www.health-track.org>
- Mayo Clinic <http://www.mayohealth.org/>
- National Asthma Education and Prevention Program <http://www.nhlbi.nih.gov/about/naepp/index.htm>
- U.S. Environmental Protection Agency <http://www.epa.gov/iaq>
- U.S. Environmental Protection Agency, Urban Environmental Initiative (UEI). Contact: Stacey Johnson, Hartford City Program Manager, (617) 918-1552 or <http://www.epa.gov/region01/eco/uei/index.html>

Outdoor Air Quality

During the last two decades, the public has become increasingly concerned over the potentially damaging health effects of air pollution, especially in Connecticut's urban areas, including Hartford. Some of the pollutants in the air are known to be toxic, or poisonous. They may have health effects ranging from triggering asthmatic attacks to causing cancer. Other pollutants are thought to be harmful, but their effects are not clearly linked to specific illnesses. It should be noted, however, that in general, Hartford's air quality compares favorably with that of other urban areas in the United States.

In Hartford, the major components of outdoor air pollution include

- Hazardous air pollutants
- Fine particles
- Criteria pollutants
- Ozone

Criteria pollutants have been monitored and regulated by the Environmental Protection Agency and the Connecticut Department of Environmental Protection since the early 1970s. There have been major improvements in air quality since that time.

What are the sources of air pollution?

Mobile Sources

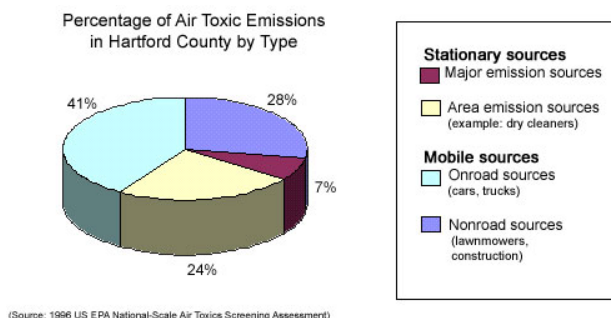
Approximately 41% of the air toxics in the Greater Hartford area comes from onroad mobile sources, which include both gasoline and diesel vehicles, such as cars, pickup trucks, heavy-duty trucks, and buses. Another 28% comes from nonroad mobile sources. Some of the toxic (poisonous) pollutants emitted by gasoline engines include arsenic, 1,3-butadiene, chromium, dioxins, formaldehyde, furans, lead, methyl tertiary-butyl ether (MTBE), nickel, styrene, and toluene.

Stationary Sources

The remainder of the air pollution is contributed by a variety of stationary sources, such as power plants, municipal waste incinerators, industrial facilities, and commercial and residential area

sources. **Area sources** include dry cleaning facilities, automobile refinishing facilities, home heating devices.

Both stationary and mobile sources contribute to the production of dioxin, ozone, fine particles (PM_{2.5}), and hazardous air pollutants.



What are health standards for pollutants?

The EPA has established two types of health standards for pollutants—primary and secondary.

- A primary standard sets exposure limits to protect public health, including the health of sensitive populations, such as children, the elderly, and people with asthma.
- A secondary standard protects public welfare, including visibility and damage to crops, buildings, and animals.

Air quality standards are based upon measured concentrations of each pollutant. These measurements are usually in milligrams or micrograms per cubic meter of air, over a standard time period. These standards are usually based on populations or individuals who are especially sensitive to the effects of the particular pollutants. Some pollutants may have several standards, one each for several timeframes.

Because the different standards for different compounds make the air pollution picture a complex one, EPA has developed a simplified **air quality index (AQI)** to rate the overall air quality for the citizens at greatest risk. EPA uses the AQI for five major air pollutants regulated by the Clean Air Act: ground-level ozone, particulate matter, carbon monoxide, sulfur dioxide, and nitrogen dioxide.

There are no national or Connecticut air ambient quality standards for air toxic compounds, except for lead. The only standards that presently exist are based on workplace exposure and are generally set at higher levels over a shorter time frame than are ambient standards (for example, a workplace exposure might be 8 hours, while an ambient exposure might be 24 hours). Some air toxic compounds may be extremely dangerous at low levels, and many (such as dioxin) are known to cause cancer.

What are the health effects of air pollution?

The effects of air pollution on human health are extremely complex. Since we are all constantly exposed to an air pollution “soup,” made up of various compounds, it is difficult to say which chemicals cause which diseases. In general, however, **ozone and fine particles** are the most widespread pollutants and may have the greatest health effects.

As concentrations of ozone and particulate matter in the air increase, sensitive individuals and the general public may suffer various health problems, including

- Worsening of asthma
- Aggravation of emphysema
- Coughing
- Lung irritation
- Increased risk of lung infections
- Premature aging of the lungs

If ozone and fine particle levels are high, people should limit both outdoor and indoor activities. If the weather is hot, people should spend more time in a cool environment, preferably one that is air-conditioned. Sensitive individuals, including the elderly, children, and people with asthma, must be especially careful.

Toxic air compounds, or hazardous air pollutants (HAPs), can also have other, sometimes more severe, effects. Some HAPs are known or probable human carcinogens. Others can affect the nervous system, especially in children.

What can a citizen do?

Transportation consumes about 25 percent of the total energy used in the United States. When people drive, they are responsible for releasing harmful chemicals into the air.

- Drive less, especially during peak traffic periods or hot days.
- Use public transportation, walk, or ride a bike.
- Combine your errands into one trip.
- Avoid revving or idling your engine more than 30 seconds
- Get regular engine tune-ups and car maintenance checks.
- Repair all vehicle leaks.

The choices you make inside your home also affect the amount of pollution outside your home.

- Use compact fluorescent lights with energy-efficiency lighting and other energy-efficient appliances.
- Turn off appliances and lights when you leave the room.
- Plant deciduous trees in locations around your home to provide shade in the summer.
- Recycle paper, plastic, glass bottles, cardboard, and aluminum cans.
- Reuse materials like paper bags and boxes.
- Properly dispose of household paints, solvents, and pesticides. For information on handling solid waste, see <http://www.epa.gov/epaoswer/osw/citizens.htm>
- Have leaky air conditioning and refrigeration systems repaired.
- Cut back on air conditioning and heating use.
- Turn the thermostat down in winter and up in summer.

If you wish to report an air pollution complaint to the DEP, send an e-mail to dep.aircomplaints@po.state.ct.us

What are hazardous air pollutants?

Hazardous air pollutants (HAPs), or air toxics, are chemicals

- Known to cause or suspected of causing cancer or other serious human health problems or
- Known to cause or suspected of causing serious damage to the ecosystem

EPA lists 188 pollutants or chemicals as HAPs. Examples include heavy metals, such as mercury, cadmium, and chromium, and organic compounds, such as benzene, dioxins, and toluene.

HAPs associated with mobile sources are generally found in similar concentrations in both urban and rural environments. However, across the United States, concentrations of other HAPs are generally higher in urban communities than in rural areas. Some of the differences in observed chemical concentrations may be because cities have more emissions sources, both stationary and mobile, because rural areas have fewer monitoring sites, or because monitoring sites are placed near urban sources.

Nationwide, the greatest sources of HAPs are road vehicles. The next greatest sources are industries that use commercial and consumer solvents (cleaners). This national pattern of emission sources is also found in the Greater Hartford area. Vehicles account for 41% of all sources of HAPs. For information on some of the stationary source emitters of HAPs, see the EPA's Toxic Release Inventory Data (TRI) <http://www.epa.gov/tri/>.

Air quality studies conducted in 1996 showed that the Hartford Landfill did not emit HAPs in concentrations that would pose either short-term or long-term health risks to residents. The Hartford Health Department is currently undertaking a follow-up study.

Hazardous air pollutants can have severe effects on human health. Some cause cancer, while others affect the nervous system, or aggravate asthma especially in children.

Most HAPs have an **acute** (immediate) effect only when people are exposed to extremely high concentrations. Such concentrations are almost never found in ambient (outside) air. More commonly, problems result from **chronic** (long-term) exposure to relatively low concentrations, or cumulative exposure.

Some of the compounds that are typically of concern to citizens are listed below. It should be

noted that their potential adverse health effects, especially cancer, are observed in individuals who have been exposed to concentrations higher than generally found in the ambient air, for very long periods.

1,3-Butadiene	Benzene
Carbon tetrachloride	Chloroform
Dioxin	Formaldehyde
Lead	Mercury
Methyl chloride	Methylene chloride
Styrene	Tetrachloroethylene

For all of these compounds other than lead, there are no national or local standards for ambient air. These compounds are usually found in much lower concentrations than other pollutants (for example, ozone). The only standards that do exist are based on workplace exposure and are generally set at lower levels over a shorter time frame than ambient exposure.

Many other HAPs, not listed above, have similar effects, although the severity may vary. For more information on specific chemicals, see the Agency for Toxic Substances and Disease Registry <http://www.atsdr.cdc.gov/atsdrhome.html>.

Many ordinary day-to-day activities contribute to HAPs in the environment. The greatest sources of HAPs in the environment are personal and commercial vehicles. Greater use of public transportation, carpooling, and more fuel-efficient vehicles would help to reduce the amounts of HAPs in the environment.

Open burning of trash and other products is the sixth largest producer of HAPs nationally. Reducing the amount of trash through recycling and wise use would help to reduce pollution from municipal waste combustion, power production, and oil and gas production.

Hartford's hazardous air pollutant concerns

Until recently, Hartford has had few sites in the city where pollutants are monitored. Since 1998, however, three sites have operated within Hartford:

- Connecticut Army National Guard Base
- Hartford Police Stables
- Hartford Landfill

Hartford compares favorably with other urban areas for concentrations of HAPs in the ambient air, although Hartford levels tend to be higher than those of rural areas.

North Meadows Landfill

Many residents have questioned whether the Hartford Landfill is a source of hazardous pollutants, including hydrogen sulfide. The federal government has studied these questions, and the Hartford Health Department is currently conducting additional research.

In 1994, the Agency for Toxic Substance and Disease Registry (ATSDR) found that the Hartford Landfill did not significantly contribute to HAPs in Hartford's North End and did not pose any short-term or long-term health risks to residents. In 1997, the ATSDR assessed the amount of sulfur gas at the landfill and in the North End of Hartford. For the complete report, see <http://atsdr1.atsdr.cdc.gov/HAC/PHA/hartford/har.html>. The agency found that the landfill concentration was far below the World Health Organization's 24-hour exposure guideline and even farther below OSHA's 8-hour workplace standard. Hartford's sulfur level was lower than that of Danbury. Although the Hartford values did represent an offensive odor, they were not likely to trigger asthmatic attacks.

What is being done in Hartford?

The Connecticut Department of Environmental Protection (DEP) and the Hartford Health Department (in conjunction with the Environmental Research Institute at the University of Connecticut) are presently monitoring air toxics at three locations within the City of Hartford.

The DEP has several programs address emissions from stationary sources, such as the state air toxics control regulation, the Air Toxics Program of the 1990 Clean Air Act Amendments, and the air toxics monitoring program. There are programs which address emissions reductions from mobile sources as well as the Small Business Assistance Program. For more information regarding these programs, see <http://dep.state.ct.us/air2/toxics/tblcnts.htm>.

The DEP publishes an annual state air quality summary. For a copy of the latest summary, see <http://dep.state.ct.us/air2/ozone/98aqs.pdf>.

The Connecticut Department of Public Health's Toxic Hazards Assessment Program (THA) evaluates human health risks from exposures to environmental contaminants. For more information, see <http://www.state.ct.us/dph/BCH/eeoh/HPEEOH.html>.

What is fine particulate matter?

State and federal agencies have long monitored particulate matter, or PM10. New research, however, has found that smaller particulate matter, PM2.5, has a much greater health effect than PM10 because the smaller particles are inhaled more deeply into the lungs. The Connecticut Department of Environmental Protection has initiated an intensive monitoring effort statewide, and data are just starting to become available.

Fine particles comprise one of the most widespread and harmful air pollutants in the Hartford area. PM2.5 is a mixture of acids, metals, petroleum byproducts, and diesel soot. The particles may be composed of various chemicals, depending on where they originate.

To date, there is relatively little information on the sources of PM2.5. It is known that PM2.5, like most other air pollutants, comes primarily from cars, trucks, and buses. Another significant portion of PM2.5 comes from industrial uses, coal power generation, and home heating. But because the standards for fine particulate matter are new, there is as yet no inventory that lists PM2.5 emitters and the amounts they produce.

Some of the health effects of fine particulate matter include:

- Faster or more shallow breathing
- Worsening of asthma and other respiratory diseases
- Increased risk of respiratory infections
- Reduced lung function in children
- Potentially increased risk of premature death in elderly and other susceptible individuals

Outdoor PM_{2.5} is especially dangerous because it can readily move indoors, especially if windows are open and no air conditioning is used. In times of high PM_{2.5} levels, people should limit both outdoor and indoor exertion. If the weather is hot, people should spend more time in a cool environment, preferably one that is air-conditioned. Sensitive individuals, including the elderly, children, and people with asthma, must be especially careful.

Many ordinary day-to-day activities contribute to fine particles in the environment. The greatest sources of environmental PM_{2.5} are personal and commercial vehicles. Greater use of public transportation, carpooling, and more fuel-efficient vehicles would help to reduce the amounts of dangerous substances added to the environment.

Hartford's fine particulate matter concerns

Because researchers are only beginning to study PM_{2.5}, little information is available on its concentrations in the Hartford area. The DEP is now operating one PM_{2.5} monitoring site in Hartford at Sheldon Street. For DEP's Air Quality Index, call (860) 424-4167 or (800) 249-1234.

In general, urban areas tend to have higher concentrations of PM_{2.5} than do rural areas. Some of the preliminary PM_{2.5} data in Connecticut show that urban areas have greater concentrations than do rural areas. Hartford is not significantly different from other urban areas.

What is ozone?

Ozone occurs naturally in the upper atmosphere and shields the earth from solar radiation. But when it occurs at ground level, ozone is one of the most dangerous of the common air pollutants, or **criteria pollutants**. It is the primary component of smog. Although ozone concentrations have gone down in recent years, ozone is still considered a major problem for all urban areas, both large and small.

Ozone is not emitted to the air directly; rather, it is formed by chemical reactions in the air. The two pollutants that form ozone are hydrocarbons (or byproducts of combustion) and nitrogen

oxides. Because energy from the sun is needed for these chemical reactions to occur, high ozone concentrations usually occur in the summer.

The Connecticut Department of Environmental Protection operates 12 ozone-monitoring stations in Connecticut, but no stations are located in the city of Hartford. The closest station is located in East Hartford at McAuliffe Park.

Like most other pollutants, ozone-producing chemicals come primarily from cars, trucks, and buses. These vehicles are the largest sources of the nitrogen oxides and produce more than 30% of the hydrocarbons that contribute to ozone. Significant amounts of ozone-producing chemicals come from industrial uses, coal power generation, and home heating.

The pollutants that cause ozone can be transported by wind hundreds of miles from their sources. Thus, ozone-producing chemicals in Hartford can actually originate in the Midwest.

The EPA has developed an Air Quality Index (AQI) to rate the overall air quality and the citizens of greatest risk. The AQI takes into account the concentration of five air pollutants, including ozone and fine particulate matter. For Hartford's AQI, see

<http://dep.state.ct.us/updates/oz/aqi.asp>.

When ozone is present at ground level, short-term and long-term exposures may:

- Cause lung inflammation
 - Exacerbate asthma and other respiratory diseases
 - Cause chest pain and coughing during exertion
 - Increase risks of respiratory illness for children and the elderly
 - Possibly lead to permanent lung damage
- Increased hospital and emergency room visits for respiratory problems have been linked to high ozone concentrations.

Outdoor ozone can move indoors, especially if windows are open and no air conditioning is used. If ozone levels are high, people should limit both outdoor and indoor activities. If the weather

is hot, people should spend more time in a cool environment, preferably one that is air-conditioned. Sensitive individuals, including the elderly, children, and people with asthma, must be especially careful.

Many ordinary day-to-day activities contribute to ozone in the environment. The greatest sources are personal and commercial vehicles. Greater use of public transportation, carpooling, and more fuel-efficient vehicles would help to reduce the amounts of dangerous substances added to the environment. Reducing electricity consumption would help to reduce pollution from power production.

Hartford's ozone concerns

The Connecticut Department of Environmental Protection operates 12 ozone-monitoring stations in the state, but no stations are located in the city of Hartford. The closest station, located in East Hartford at McAuliffe Park, is considered representative of the city of Hartford. An EPA website, AIR/NOW <http://www.epa.gov/airnow/>, provides an ozone forecast for the next day for the Hartford area.

Hartford's ozone concentrations are similar to those in other urban areas in Connecticut. In 1996 Hartford did not exceed ozone standards. In 1997, ozone concentrations in Hartford were greater than the 1-hour standard two times, in 1998 one time, and in 1999 only two times.

How can I report odors?

If you notice an odor, call as soon as possible. Give the following information when you call:

- Your name and phone number
- When you noticed the odor (date and time)
- How long the odor lasted
- Where you noticed the odor: indoors, outdoors, in your home, at work, elsewhere?
- Description of odor and how strong the odor is

*Adapted with permission from the
Connecticut Coalition for Environmental Justice*

South Meadows

Metropolitan District Commission (MDC), 724-1525. Call to report all odors from the sewage treatment plant or any other unknown odor from the South Meadows. MDC must

investigate odors at any time of the day or night, so call as soon as possible.

Connecticut Resources Recovery Authority (CRRA) consultant, 1-800-472-8630. Call to report all odors from the trash incinerator plant or recycling plant (garbage smells) in the South Meadows.

North Meadows

Connecticut Resources Recovery Authority (CRRA), 1-800-472-8630 or 549-1751 extension 3005. Call to report odors from the landfill in the North Meadows.

Throughout Hartford

Connecticut Department of Environmental Protection (DEP), 424-3436. Call to report any odors or air pollution

Where can I go for more information?

Air Quality Index

- U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards <http://www.epa.gov/airnow/aqibroch/aqi.html>

Air toxic

- U.S. Environmental Protection Agency <http://www.epa.gov/region01/eco/airtox/>

Source for environmental resource and waste management data

- Environmental Defense Fund Scorecard http://www.scorecard.org/general/tri/tri_gen.html

Toxic Release Inventory

- U.S. Environmental Protection Agency, Toxics Release Inventory: Community Right-to-Know Homepage <http://www.epa.gov/tri/>
- U.S. EPA Envirofacts Warehouse Toxics Release Inventory: TRI Overview http://www.epa.gov/enviro/html/tris/tris_overview.html
- RTK Net: The Right-to-Know Network <http://www.rtk.net/trisearch.html>

Mobile sources

- U.S. EPA Office of Transportation and Air Quality <http://www.epa.gov/omswwww/>

Ozone

- U.S. EPA, Region 1 <http://www.epa.gov/region01/eco/ozone/>

Indoor Air Quality

Although most people want to believe that their homes, workplaces, and schools are safe places, recent scientific evidence shows that the air within homes and other buildings may be much more polluted than the air outside. The U.S. Environmental Protection Agency estimates that exposure to air pollutants can be two to five times higher (sometimes more than 100 times higher) indoors than outdoors. Since most people stay indoors most of the day (often 90% of the day), they are exposed to indoor air much more than to outdoor air. The health effects of poor quality indoor air may therefore be very important. Moreover, the people who are most vulnerable to such health effects—the very young, the elderly, and the chronically ill—are the ones most likely to spend the most time indoors.

Some indoor air pollutants are known to be toxic, or poisonous. They may have health effects ranging from triggering asthma attacks to causing cancer. Other indoor pollutants are thought to be harmful, but their effects are not clearly linked to specific illnesses. Establishing links between specific illness and specific indoor air pollutants is difficult because most people are exposed to many contaminants at low levels. The most common contaminants encountered as indoor air pollutants include carbon monoxide, tobacco smoke, asbestos, pesticides, and microbes.

There is no formal organization in Connecticut that is responsible for indoor air quality.

What are the sources of indoor air pollutants?

Indoor air pollution is caused by several factors:

- Sources that release gases or particles into the air
- Fuels and other combustion (burning) sources: oil, gas, kerosene, coal, wood, and tobacco
- Building materials: insulation that contains asbestos, wet carpets, furniture made from some pressed wood products, old lead-based paint
- Household supplies: cleaning and maintenance products, personal care products

- Air systems: central heating and air conditioning systems, humidifiers
- Outdoor sources that come indoors: pesticides and outdoor air pollution
- Other: pet dander
- Poor ventilation, which fails to bring in enough fresh air and send pollutants outside

High temperature and humidity can increase the concentrations of some pollutants

What are Hartford's risk factors?

Many of the sources of indoor pollution are related to the age and condition of buildings. Hartford, with many old and deteriorating buildings, is at risk for many indoor air problems. Sources include:

- Deteriorating lead-based paint in old housing.
- Poorly adjusted or poorly vented gas stoves
- Malfunctioning or leaky furnaces or chimneys
- Asbestos in old floor tiles or insulation
- Poorly vented space heaters
- Cleaning fluids that contain solvents
- Pesticides
- Damp, poorly ventilated kitchens and bathrooms

Indoor air quality is a concern not just for Hartford homes, but also for Hartford schools, many of which suffer from these problems.

It should be noted that radon, a colorless, odorless radioactive gas that is an indoor pollutant in some parts of Connecticut, is not a problem in Hartford.

What are some of the common indoor air pollutants?

Carbon monoxide (CO) is a colorless, odorless gas. It comes from burning oil, gas, kerosene, coal, and wood. Common household sources include gas stoves and gas water heaters, unvented gas and kerosene space heaters, leaking chimneys and furnaces, woodstoves and fireplaces, and cars.

Environmental tobacco smoke, also known as secondhand smoke, is a combination of more

than 4,000 chemical compounds, of which more than 40 are known to cause cancer in people. It introduces both gas and particles that contaminate indoor air. Cigarette, cigar, and tobacco pipe smoking are the sources of tobacco smoke indoors.

A 1992 EPA report concluded that environmental tobacco smoke was responsible for 3,000 deaths each year from lung cancer in adults who did not smoke. The report also stated that tobacco smoke caused between 150,000 and 300,000 respiratory infections in babies under 18 months old, resulting in between 7,500 and 15,000 hospitalizations each year. Infants and children who are exposed to tobacco smoke may also get more middle-ear infections. Older children may suffer reduced lung function.

Exposure to environmental tobacco may cause thousands of children to develop asthma each year. In children who already have asthma, environmental tobacco smoke may increase the number and severity of asthma attacks. Environmental tobacco smoke may also contribute to heart disease.

Volatile and semivolatile organic compounds include a variety of chemicals that are found in many household products. They are chemicals that evaporate fairly easily into the air. Some are flammable. These chemicals are commonly found in aerosol sprays, such as hair spray and air fresheners, rug and oven cleaners, paints and paint strippers, pesticides, dry cleaning fluids, building materials and home furnishings, craft materials such as glues and permanent markers, cleaning products, subflooring, and paneling.

Biological air pollutants include bacteria and viruses, molds, mildew, animal dander and saliva, dust mites, cockroaches, and pollen. They are common in homes, schools and workplaces. Sources include humans, pets, humid conditions, outdoor air, and standing water.

Asbestos is a mineral fiber that was formerly used in building products to increase their strength of products, to provide insulation, and to slow down fires. Asbestos has been banned from many products because exposure to its small

particles can cause cancers and other serious lung disease.

Why is indoor air quality in schools a special concern?

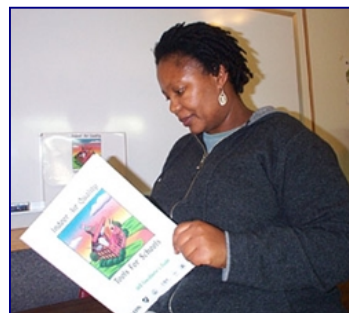
- Young children are usually more sensitive than adults to air pollutants
- The presence of asthma triggers creates a greater risk of asthma attacks for children
- Exposure to air pollutants can reduce the ability of teachers, students, and staff to concentrate, thus damaging both teaching and learning experiences
- School themselves may have special sources of pollution not found in homes or many other buildings, such as science laboratories, machine shops, woodworking shops, kitchens, art studios, and copy and printing facilities.

The Connecticut Academy of Science and Engineering recently found that 68% of Connecticut schools have reported problems in the indoor environment.

What is Hartford doing about indoor air pollution?

The EPA's *Tools for Schools* program provides an action kit for schools to use to identify and address indoor air quality problems, including those that may be asthma triggers. For

information on the kit, contact atesta@alact.org, connecticosh@snet.net, or kenny.foscue@po.state.ct.us.



The **Connecticut School Indoor Environment Resource Team**, an informal coalition of federal, state, and nonprofit agencies, has formed to improve air quality in schools throughout the state. Its members include representatives of state agencies, universities, and nonprofit organizations. The team offers help to Connecticut schools with *Tools for Schools* training, implementation, and technical issues.

Contact: Donielle Wilson, ConnectiCOSH, 77 Huyshope Avenue, Hartford, CT 06106, (860) 549-1877, or Kenny Foscue, Connecticut Department of Public Health, (860) 509-7742.

Program Manager, (617) 918-1552 or <http://www.epa.gov/region01/eco/uei/index.html>

What remains to be done?

The Connecticut Academy of Science and Engineering recently released a report entitled *Indoor Air Quality in Connecticut Schools*. It recommends the following actions:

- Creation of a formal state agency to coordinate and improve evaluations of indoor air quality in schools and other public buildings and the possible health effects on the occupants of those buildings
- Adequate state funding of such an agency
- Adequate state funding for air quality improvements and maintenance in new and existing schools

Where can I go for more information?

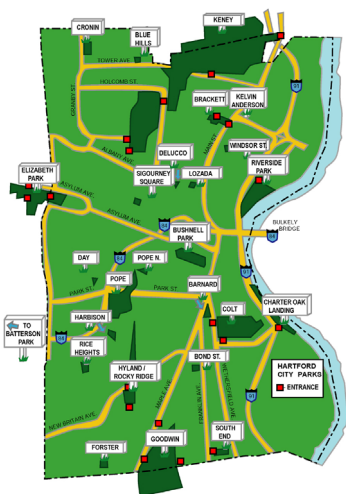
- American Lung Association: Air Quality Section <http://www.lungusa.org/air/>
- Connecticut Department of Public Health, Bureau of Community Health: Environmental Epidemiology and Occupational Health <http://www.state.ct.us/dph/BCH/EEOH/HPPEOH.html#Publications>
- U.S. Environmental Protection Agency <http://www.epa.gov/iaq/>
- U.S. Environmental Protection Agency, Indoor Air Quality Hotline 1-800-438-4318
- American Society of Home Inspectors <http://www.ashi.com/>
- Center for Building Science News <http://eande.lbl.gov/CBS/NEWSLETTER/CBSNEWS.html>
- Healthy House Institute <http://www.hhinst.com/>
- Healthy Indoor Air for America's Homes <http://www.montana.edu/wwwcxair/>
- Heating, Piping, and Air Conditioning Engineering IAQ Web Links http://www.hpac.com/member/information_tech_tips/1999/9911ittips.html
- National Safety Council <http://www.nsc.org/ehc/indoor/iaq.htm>
- U.S. Environmental Protection Agency, Urban Environmental Initiative (UEI). Contact: Stacey Johnson, Hartford City

Open Space

Open space is any open piece of land that is undeveloped (has no buildings or other built structures) and is accessible to the public. Open space can include green space (land that is partly or completely covered with grass, trees, shrubs, or other vegetation), such as parks, community gardens, and cemeteries; schoolyards; playgrounds; public seating areas; public plazas; and vacant lots. Open space provides

recreational areas for Hartford's residents and helps to enhance the beauty and environmental quality of neighborhoods.

The map shows areas of the city that are considered open space. It does not show privately owned green spaces or city-owned cemeteries.



Parks in Hartford

Hartford's parks were established in the era of the American park movement. Hartford's extensive system of parks and recreational sites total over 2,000 acres, with almost one acre for every 60 residents. Nearly every Hartford resident lives within a half-mile of a city park.

Large multi-use parks

Batterson	Colt
Goodwin	Keney
Pope	Hyland/Rocky Ridge
Bushnell	http://www.bushnellpark.org/
Elizabeth	http://www.elizabethpark.org/
Riverside	http://www.riverfront.org/index.html

Medium-size parks

Barnard	Brackett
Blue Hills	Charter Oak Landing
Cronin	Harbison
Kelvin Anderson	South End

Smaller parks/playgrounds

Bond Street	Day
DeLuco	Forster
Lozada	Pope North
Rice Heights	Sigourney Square
Windsor Street	

Urban Greenspace Revitalization Project

This project aims to restore, maintain, and enhance the social, economic, and environmental viability of the South Branch of the Park River watershed, in the Behind the Rock neighborhood. It is converting an overgrown dump area into an open space for public use, with benches, walking trails, and bike paths. The project is being conducted by the Eastern Connecticut Resource Conservation and Development Area (RC&D). For more information, contact Moses Taylor, RC &D Coordinator, 24 Hyde Avenue, Vernon, CT 06066-4503, phone (860) 875-3881, fax (860) 870-4730, e-mail Moses.Taylor@CT.usda.gov or see <http://neirtnt.ct.nrcs.usda.gov/inform/rc&d/rcdhome.htm>

Greater Hartford Urban Outdoor Classroom and Nature Trail

The installation of a two-mile, stone-dust nature trail, straddling the floodplain of the North Branch of the Park River and Mark Twain Drive, transformed a site that had long been used as an illegal dumping area. The project is coordinated by the Eastern Connecticut Resource Conservation and Development Area (RC&D). For more information, contact Moses Taylor, RC &D Coordinator, 24 Hyde Avenue, Vernon, CT 06066-4503, phone (860) 875-3881, fax (860) 870-4730, e-mail Moses.Taylor@CT.usda.gov or see <http://neirtnt.ct.nrcs.usda.gov/inform/rc&d/rcdhome.htm>

Community Gardens in Hartford

Community gardens are one way that Hartford residents are joining together to fight the deterioration of their neighborhoods and to better their lives. Community gardens can be set up on vacant lots or even rooftops, and they offer many benefits:

- They create opportunities for people to work together to improve their own communities in many ways.

- They help to create a community of children and adults working together.
- They provide opportunities for adults and children to learn about the environment.
- They provide a more livable environment by controlling physical factors such as noise and pollution.
- They can inspire the cleanup of vacant lots and the productive use of building rooftops.
- They provide wholesome, low-cost fresh fruits and vegetables.
- Gardening offers moderate exercise that most people can participate in.

In Hartford, community gardens exist at the following locations:

Affleck	158 Affleck Street, between Park and Ward Streets
Allen Chapel	2219 Main Street, on grounds of Allen Chapel Church
American Legion	Corner of Windsor and Battles Streets
Blue Hills	Corner of Tower Avenue and Grand Street
Broad Street Buckley	Between Russ and Grand Streets George Street, on the grounds of the Buckley Convalescent Home
Chestnut	Between Albany Avenue and Walnut Street
Church of the Good Shepherd	155 Wyllys Street
Clark/Nelson	Corner of Clark and Nelson Streets
Evergreen	Corner of Evergreen Avenue and Fales Street
Nelson/Clay	Corner of Nelson and Clay Streets
Niles Street	One block west of Sigourney Street
Omega	833 Windsor Street, facing Main Street
Watkinson	Off Bloomfield Avenue, behind the Unitarian Meeting House
West End	Girard Avenue, on the grounds of the University of Connecticut Law School
Winter-Green	Between Winter and Green Streets

For more information, contact the Knox Parks Foundation, Inc., 150 Walbridge Road, West Hartford, CT 06119, (860) 951-7694.

To start a community garden:

1. Find at least ten people interested in working on a garden.
2. Identify a piece of land.
3. Find out if water service is available at the site. Call the Metropolitan District (MDC) at (860) 278-7850.
4. Find out if the soil is contaminated. Call the Connecticut Agriculture Experiment Station at (860) 683-4977, or see <http://www.caes.state.ct.us>
5. Get more information. Assistance is available at the Knox Parks Foundation, Inc., (860) 951-7694, or see <http://www.communitygarden.org/pubs/starting.html>

Vacant lots in Hartford

A vacant lot is a piece of property that has no buildings on it. In many cases, these lots once held houses, but as the buildings fell into disrepair, they were burned or demolished. Hartford currently has about 300 acres of vacant land.

Vacant lots can present a variety of problems for the neighborhood:

- Unsafe conditions for children and adults
- Opportunities for illegal dumping of litter and other solid waste
- Possible hazardous waste contamination, such as lead, cadmium, arsenic, and asbestos
- Homes for rats
- Wasted resources
- Disruption of neighborhood's sense of community
- Lowering of neighborhood property values
- Increasing opportunities for crime

Vacant lots are also an environmental justice issue, since there are more vacant lots in the city's poorer neighborhoods.

The main goal of vacant lot policies is to move these lots into productive use, such as community gardens, parks and playgrounds, new housing units, new businesses, and off-street parking. Because each site is unique and each neighborhood has unique needs, plans for vacant land need to be developed at the neighborhood level.

What is Hartford doing about vacant lots?

EPA's Urban Environmental Initiatives Program has worked with the Hartford Redevelopment Agency to develop a program that allows selected vacant lots to be transferred to local residents.

Hartford Areas Rally Together (HART) has helped to clean up vacant lots in three target communities. **ONE/CHANE** (Organized North Easterners/Clay Hill and North End), in partnership with the Connecticut Prison Association and the Hartford Department of Public Works, developed three new community gardens. The **Citizens Research and Education Network** (CREN), in cooperation with the Hartford Housing Authority, initiated a new community garden at the Dutch Point housing projects.

ONE/CHANE and the Knox Parks Foundation helped to establish **Hartford Trees**, an organization that will plant trees to commemorate community leaders. **Knox Parks Foundation**, in partnership with the City of Hartford, Quirk Middle Schools, the Connecticut Department of Environmental Protection (DEP), South Arsenal Neighborhood Development Corporation (SAND), ONE/CHANE, and the House of Bread turned a lead-contaminated vacant lot on Chestnut Street into a green space. The site will eventually contain community gardens, an outdoor environmental study area for the school and a vegetable garden for the soup kitchen. **Trinity College** students removed lead from the soil using special plants.

Central Connecticut State University and **ONE/CHANE** completed a study of neighborhood pocket parks in North Hartford to document the social impact of community-based parks.

The **DEP**, in partnership with the **Hartford Clean Cities Program** and the **Alternative Incarceration Program**, cleaned up more than 800 vacant lots in Hartford between 1995 and 2000.

Hartford's Urban Forest

Hartford's trees comprise an urban forest and represent one of the city's most treasured assets. These trees are diverse in size and stage of maturity, ranging from state champions to select cultivars to common but beautiful specimens.

The City of Hartford's Park Maintenance (Forestry) Division of Public Works maintains more than 25,000 street trees and 2,500 acres of parkland trees. For additional information or help with tree problems in Hartford, contact the Park Maintenance Division at (860) 722-6524.

Where can I go for more information?

Hartford Parks

- Bushnell Park <http://www.bushnellpark.org/>
- Elizabeth Park <http://www.elizabethpark.org/>
- Riverfront Recapture <http://www.riverfront.org/>

Community Gardens

- American Community Gardening Association, <http://www.communitygarden.org/>
- Metropolitan District (MDC), <http://www.themdc.com/firstpag.htm>
- Connecticut Agriculture Experiment Station <http://www.caes.state.ct.us/>
- Trust for Public Land <http://www.tpl.org/>

Vacant Lots

- Trust for Public Land <http://www.tpl.org/>

Other

- Hartford Public Library <http://www.hartfordpl.lib.ct.us/>
- Urban Environmental Initiative (UEI).
Contact: Stacey Johnson, Hartford City
Program Manager, (617) 918-1552 or
<http://www.epa.gov/region01/eco/uei/index.html>

Brownfields

Brownfields are abandoned, idled, or underused industrial and commercial facilities or sites that have real or perceived environmental contamination and an active potential for redevelopment or reuse. Brownfields are often found in economically distressed areas and are usually considered lightly contaminated from previous use.

Why does Hartford have brownfields?

The rise of brownfields in Hartford can be traced to an industrial migration that occurred in the city, and elsewhere in Connecticut, in the 1980s and 1990s. As a result of this industrial migration, many buildings and sites, including many with potential environmental hazards, were abandoned. Hazards included ash used as fill and toxic substances from old manufacturing processes.

By 1997, more than 750 buildings were vacant. Since then, many blighted buildings have been demolished, but some 480 vacant buildings remain; of that number, 330 will be mothballed for future use. According to the U.S. Environmental Protection Agency, one-third of all land zoned for commercial or industrial uses in Hartford can be classified as brownfields.

What is Hartford doing about its brownfields?

Hartford is working to clean up its brownfields, protecting the environment and safeguarding public health, and return them to economically productive uses. Through the U.S.

Environmental Protection Agency's

Brownfields Economic Redevelopment

Initiative, the city and the EPA are working to prevent, assess, safely clean up, and sustainably reuse brownfields. The city's goal was to attract manufacturing and commercial industries to brownfield sites.

In 1997 the EPA selected Hartford as a **National Brownfields Assessment Pilot** and awarded the city \$200,000. The pilot project targeted blighted and deteriorated sites in three Hartford neighborhoods—Sheldon/Charter Oak, Upper Albany, and Clay Arsenal—areas where the EPA

determined that perceptions of environmental contamination had impeded economic development. Unemployment rates in these target areas ranged from 15 to 24 percent, and minorities constituted 80 to 99 percent of the population.

In this initial program, Hartford, with funding from the EPA and other agencies and organizations, identified more than 30 properties of community concern. In March 2000 the EPA gave Hartford \$150,000 in supplemental assistance to target four sites for assessment and/or development of cleanup plans. The goal is ultimately to transfer the restored properties back to the city's tax roles.

In August 2000, a community partnership began converting a brownfield in North Hartford into a greenfield that will produce fish, crayfish (similar to lobsters), and organic vegetables for families in the community. The project consists of two parts: an **aquaponic greenhouse**, being constructed by the University of Connecticut, and a community garden for organic produce. The garden site will be planted, weeded, and harvested by volunteers and local youth workers, who will then distribute the organically grown vegetables free to senior citizens.

This project was organized by ONE/CHANE, with support from the University of Connecticut's Environmental Research Institute, the City of Hartford, the U.S. Environmental Protection Agency, and many community organizations, local businesses, and city residents.

For further information, contact Kevin P. Hood, Environmental Research Institute, University of Connecticut, Longley Building, 270 Middle Turnpike, Unit 5210, Storrs, CT 06269-5210, (860) 486-2546.

Who is helping Hartford?

Work on Hartford's brownfields has enlisted the cooperation of numerous local, state, and federal organizations, including the following:

Local

Hartford Health Department

Hartford 2000 and Neighborhood Revitalization Zones

Trinity College

Knox Park Foundation

Co-Opportunity

Concerned Citizens to Save the Sheldon Charter

Oak Neighborhood

SAND

Parkville Business Association

House of Bread Soup Kitchen

State

Connecticut Department of Environmental Protection

University of Connecticut

Federal

U.S. Environmental Protection Agency

U.S. Department of Agriculture

U.S. Department of Housing and Urban Development

Brownfields Tax Incentive in Hartford

Under the Taxpayer Relief Act of 1997 (the Brownfields Tax Incentive), a taxpayer may be able to deduct qualified remediation expenses spent to clean up a property if the property is within any one of four targeted areas. The environmental cleanup cost deduction provides individuals and businesses with an incentive to clean up certain sites that are contaminated with a hazardous substance. An individual or business can choose to deduct certain cleanup costs in the year they are paid instead of recovering these costs by either:

1. Taking depreciation deductions, if allowed, over several years, or
2. Reducing the taxable gain when the property is sold or exchanged.

How can I evaluate a brownfield site for development?

For successful redevelopment, a property should meet certain criteria, which are listed below. Unfortunately, there is no one formula to determine which combination of these components will ensure success of a brownfields redevelopment effort.

EPA's criteria of evaluation are:

- **Ownership status: public or private**
 - If the property is public, it should allow for easy access and the ability to transfer or sell once the site has been redeveloped.
 - If the property is private, be sure that the owner understands your intentions. Issues such as access, repayment of public funding, and contribution to the eventual cleanup of the property should be addressed.
- **Size: large or small**
 - Large properties can easily be split up and sold off in pieces after they have been redeveloped.
 - Often, several small properties from adjacent properties can be combined for effective redevelopment and use.
- **Transportation access**
Important factors, especially for commercial redevelopment, include
 - Easy access to public transportation
 - Location near major highways
 - Availability of sufficient parking
 - Commercial or industrial projects require that workers can get to the site conveniently via public or private transportation.
- **Special status**
 - Special funding may be available for redevelopment in historic districts or empowerment zones/enterprise communities (distressed communities that the federal government has targeted to receive technical resources to encourage private sector development, job growth, and entrepreneurship).
 - Special restrictions may exist on projects for historic properties, and these should be investigated before a reuse plan is developed.
- **Public benefit**
 - Will the redevelopment of the site enhance the quality of life for the surrounding community?
 - Will it generate tax revenue for the city or county?
 - Is it part of a larger revitalization effort that can contribute to, or can benefit

from, the leveraging of financial or technical support?

- **Costs**
Projected costs for assessment, cleanup, and redevelopment should be balanced against projected grants, loans, or in-kind financial support.
- **Contamination**
 - What is the nature of the contamination at this site?
 - Has it been previously assessed or had potential environmental hazards removed?
 - If the state or federal government has proposed further site investigation, or if there is concern regarding the level or nature of contamination at the target site, you may want to review the options for cleanup and redevelopment under the Superfund program

For further information, see EPA Region 1's brownfields Website <http://www.epa.gov/region01/brownfields/index.html>

Redeveloping Brownfields Property

Once a property has been evaluated, redevelopment involves the following steps:

1. Site inventory: creation of a listing of evaluated properties based on predetermined criteria.
2. Site assessment:
Phase I: Studying the historical significance of the property
Phase II: Performing a comprehensive assessment of contaminants on the property.
3. Site cleanup: planning and implementing the appropriate process for cleaning up the property based upon the site assessment.
4. Site redevelopment: preparing the property for reuse.

Where can I go for more information?

For further information about Hartford's brownfields programs, contact Jeanne C. Webb Senior Project Manager, City of Hartford Brownfield Pilot Program, Office of the City Manager, Property Acquisition and Disposition,

10 Prospect Street, Hartford, CT 06105, (860) 522-4888 extension 6741, e-mail

jwebb@ci.hartford.ct.us

Federal resources

- U.S. Environmental Protection Agency, <http://www.epa.gov/swerosps/bf/org-pub.htm>
<http://www.epa.gov/region01/brownfields/>
<http://www.epa.gov/brownfields/index.html>
- Urban Environmental Initiative (UEI). Contact: Stacey Johnson, Hartford City Program Manager, (617) 918-1552 or <http://www.epa.gov/region01/eco/uei/index.html>
- Guide to Federal Brownfield Programs <http://www.nemw.org/FedGuide2000.pdf>
- National Livability Resource Center <http://www.livablecommunities.gov/toolsandresources/index.htm>
- Agency for Toxic Substances and Disease Registry <http://www.atsdr.cdc.gov/atsdrhome.html>

Federal funding resources

- U.S. Environmental Protection Agency <http://www.epa.gov/region01/brownfields/>
- Federal Housing Finance Board <http://www.fhfb.gov/>
- U.S. Department of Commerce, Economic Development Administration <http://www.doc.gov/eda/>
- U.S. Department of Housing and Urban Development, Brownfields Economic Development Initiative <http://www.hud.gov/nofa/suprnofa/supnofa2/bedi.cfm>
- U.S. Small Business Administration <http://www.sba.gov/>

Connecticut funding sources

- Connecticut Development Authority/Connecticut Redevelopment Authority <http://www.state.ct.us/cda/>
- Connecticut Department of Economic and Community Development Remediation and Insurance Fund <http://www.state.ct.us/ecd/>

Nonprofit organizations

- Brownfields Non-Profit Network <http://www.brownfieldsnet.org/>

Environmental Justice

According to the U.S. Environmental Protection Agency, *environmental justice* or *environmental equity* means that all people—of all races, cultures, and incomes—should be treated fairly with regard to environmental laws, regulations, and policies. In other words, all people have a right to live in a healthy environment: to breathe clean air, to drink clean water, and to eat uncontaminated foods. In 1994, President Clinton established environmental justice as a national priority when he declared: “All communities and persons across this Nation should live in a safe and healthful environment.”

To be classified as an EPA environmental justice community, residents must

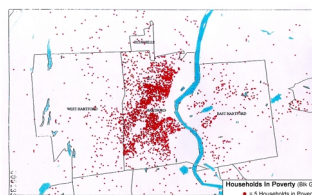
- Be members of a minority or low-income group
- Be excluded from the environmental policy setting and/or decision-making process
- Be subject to disproportionate impact from one or more environmental hazards
- Experience an unequal implementation of environmental regulations, requirements, practices, and activities in their communities

For additional information about this program, contact the EPA Region 1 Environmental Justice Program <http://www.epa.gov/region01/steward/ejprog/index.html>.

The Connecticut Department of Environmental Protection, in its *Environmental Equity Policy* (1993), states: “no segment of the population should, because of its racial or economic makeup, bear a disproportionate share of the risks and consequences of environmental pollution or be denied equal access to environmental benefits.”

Although environmental justice is a goal at all levels, the U.S. Department of Health and Human Services, in *Healthy People 2010* <http://www.health.gov/healthypeople/>, recognizes that at present poor people and people of color are at greater than average risk of exposure to environmental hazards. For example, low-income individuals and people of color are more likely than other groups to live near landfills,

incinerators, and hazardous waste treatment facilities.



poverty are living (according to the 1990 census).

Maps help us to see where environmental problems are most common. This section includes a map that shows where households in

Hartford's background

In 1990 Hartford was the nation's 8th poorest city with a population over 100,000. Its poverty rate was nearly 28% (compared with 7% statewide), and 45% of its children under the age of 18 lived in poverty (compared with 5% statewide). In 1995, 62% of Hartford's population was living in poverty.

Median Income (1990)	
Hartford	Under \$25,000
Connecticut	Over \$49,000
United States	Almost \$38,000

According to the most recent census figures available, Hartford has a population of approximately 130,000 people. Of that number, 70% is minority, with 36% black and 34% Latino.

In terms of poverty, income, employment, and education, Hartford had the greatest disparity with its suburban neighbors of any U.S. city. As a measure of its poverty, Hartford has the largest Women's, Infants, and Children's program, a federal food subsidy program, in the state, with more than 11,000 clients. Some 67% of all Hartford children under the age of 5 are enrolled in WIC.

In 1998 Hartford had more than 8% unemployment, while the State of Connecticut had only 4% unemployment. In the past thirty years, Hartford has lost about one-third of its manufacturing jobs.

How do environmental justice issues affect Hartford?

Asthma

The causes of asthma are not thoroughly understood, but it is known that inherited factors and environment both play a role. Many of the factors that may trigger asthma attacks are related to poor housing quality, such as dust mites, cockroaches, mold, and mildew.

Asthma is widely considered an epidemic in the United States today. Asthma rates are rising for all age groups, within and outside urban areas, regardless of race, income, and region of the country. Hartford's rates are alarmingly high. In summer 2000, the Hartford City Council declared an "asthma emergency" in the city.

Lead poisoning

Because the major source of lead poisoning today is deteriorating lead-based paint from older homes, Hartford's housing situation is closely related to its lead poisoning problem.

Hartford has approximately 56,000 housing units, including many substandard and vacant units. A typical dwelling in Hartford is a three-family house, may have very little green space around it, and dates from around 1920. These houses often feature many windows and porches, which are commonly covered with lead-based paint. Typically, the exterior was last painted in 1975 (before the ban on lead-based paint in residences); the interior was last painted in 1980 (just after the ban).

Many of the housing units suffer from problems of deferred maintenance, including deteriorating lead-based paint. Many landlords can no longer afford to maintain their buildings, and more than 600 buildings have been abandoned. Hartford ranks last in the state for percentage of owner-occupied dwellings, with only 21% of Hartford's dwellings owner-occupied.

Indoor air quality

Poor indoor air quality, in homes, schools, and workplaces, may contribute to a variety of environmental health problems ranging from asthma to cancer. Environmental tobacco smoke,

or secondhand smoke, is one of the most serious, and yet one of the most easily remedied, pollutants. Other indoor air pollutants are often connected to poor quality structures, such as mold and mildew from damp kitchens and bathrooms; gases and particles from leaky furnaces and chimneys and poorly vented gas stoves or space heaters; and cockroaches in poorly maintained buildings.

Outdoor air quality

The Hartford Environmental Justice Network, a coalition of community, labor, and environmental groups, is particularly concerned with possible air pollution produced by trash burning and by the effects of such pollution on asthma. Connecticut burns more of its garbage than any other state, and 66 towns in Connecticut, New York, Massachusetts, and Vermont take their garbage, and 16 cities and towns take their sludge, to Hartford's eight regional waste facilities.

Another current concern is the contribution that diesel engine exhausts make to air pollution and the possible health effects. Diesel exhaust consists of hundreds of gases and particles, many of which are known to be harmful to human health. The EPA is studying this problem. The Hartford Environmental Justice Network, composed of Hartford residents and grassroots community organizations concerned with environmental issues, has received EPA funding to educate city residents about possible connections between diesel emissions and asthma.

Brownfields

During the 1980s and 1990s, the State of Connecticut lost many military and industrial jobs. In the City of Hartford, the number of jobs fell by 22% between 1989 and 1995. The loss of these jobs often meant that buildings were abandoned. Many of these abandoned areas had potential environmental hazards, such as ash formerly used as fill and toxic substances from old plating and manufacturing processes.

In 1997, Hartford became part of EPA's Brownfields Initiative.

What are the goals of the environmental justice movement?

1. **To improve the scientific basis for understanding environmental issues**
For environmental justice to occur, environmental issues must be well understood. Many environmental health issues are not yet thoroughly understood. For example, the various causes of asthma—both inherited and environmental—are not well understood. To improve scientific understanding, we must
 - Collect and analyze data
 - Develop scientifically valid standards to measure environmental risks
 - To increase research on health risks from exposure to toxics
 - To take necessary precautions based on how well we understand the problem right now
2. **To educate the public about environmental health issues**
3. **To involve all stakeholders—of all races, ethnicities, income levels, ages—at all levels of decision-making**
 - To establish partnerships with stakeholders
 - To seek input from all stakeholders
 - To communicate findings to all stakeholders
 - To get feedback from stakeholders
4. **To reduce the disproportionate environmental burden borne by poor people and people of color**
 - To reduce the use of toxic materials (pollution prevention), especially in poor and communities and communities of color
 - To eliminate discriminatory siting of polluting facilities
 - To reduce the prevalence of environmental illnesses, especially in poor and communities and communities of color
5. **To continuously reassess action items and to develop solutions for emerging issues**
6. **To ensure compliance and enforcement**

Connecticut Department of Environmental Protection: Environmental Equity Program

The Connecticut DEP's Environmental Equity Program is designed to incorporate principals of environmental justice into all aspects of the department's program development, policy making, and regulatory activities. Its efforts include

- Assessing and responding to environmental problems in poor and communities and communities of color
- Developing strategies to increase public participation in the agency's decision-making process
- In cooperation with state and local health departments, identifying community health concerns
- Increasing public participation in administrative proceedings
- Decreasing language barriers
- Assessing the effectiveness of the department's efforts in the state's urban areas

For further information, contact
Connecticut Department of Environmental Protection, Office of Urban and Community Ecology, 79 Elm Street, 3rd Floor, Hartford, CT 06106-5127, (860) 424-3001,
<http://dep.state.ct.us/aboutdep/progacti.htm#Urban>

What is Hartford doing?

The **Hartford Environmental Justice Network** (HEJN) is a coalition of community-based groups that works on urban environmental issues. It is the local affiliate of the Connecticut Coalition for Environmental Justice (CCEJ). Among the issues that the network has worked on are the following:

- Persuading the Hartford City Council to declare an asthma emergency in Hartford in 2000
- Raising awareness about the relationship of airborne toxins from incineration of trash and asthma
- Stopping development of a huge truck stop in Hartford's North Meadows
- Campaigning to reduce diesel emissions
- Increasing education about household hazardous waste, in both English and Spanish
- Promoting legislation to ban medical waste in Hartford.

- Demanding sewage sludge compost fire accountability.
- Opposing expansion of the Hartford landfill
- Protecting Coltsville residents and children.
- Raising environmental concerns about the cleanup of Adriaen's Landing

For further information, call Dr. Mark Mitchell, (860) 548-1133, or M_MHC@msn.com.

The mission of the **Connecticut Coalition for Environmental Justice** is to protect the state's urban environments by educating the community, promoting changes in state policy, and promoting individual, corporate, and governmental responsibility toward the environment. Its definition of environment includes the places where people live, work, play, and go to school.

In addition to working with the Hartford Environmental Justice Network, CCEJ is assisting environmental justice activists in other cities, including New Haven and Waterbury. The coalition is a founding member of the Connecticut Coalition for Clean Air, which is working to have the state require that the five largest and most polluting power plants meet modern pollution standards.

For further information, contact the Connecticut Coalition for Environmental Justice
P.O. Box 2022 Hartford, CT 06145-2022
Phone: (860) 548-1133
Fax: (860) 548-9197
e-mail: M-MHC@msn.com

ONE/CHANE (Organized Northeasterners/Clay Hill and North End) is a grassroots community-based agency that provides organizing services, advocacy, and development for residents of North Hartford. The primary mission of ONE/CHANE is to rebuild the North Hartford community after years of physical decay, moral decline, and environmental damage. To accomplish this mission, ONE/CHANE implements strategic interventions:

- Community organizing
- Ownership housing development
- Employment and job training
- Environmental Justice

- Improving child welfare
- Economic development

Contact: Larry Charles, Executive Director, 2065 Main Street, Hartford, CT 06120, phone (860) 525-0190, fax (860) 522-8266, lcharles@snet.net.

Where can I go for more information?

- U.S. Environmental Protection Agency, Region 1, One Congress Street, Boston, MA 02203:
 - Environmental Justice Program, James Younger, Director, Office of Civil Rights and Urban Affairs, (617) 918-1061; Art Wing, EJ Coordinator, (617) 918-1347; Ronnie Harrington, EJ Grants Program Manager, (617) 918-1703, <http://www.epa.gov/region01/steward/ejprog/index.html>
 - Children's Health <http://www.epa.gov/region01/children/index.html>
 - Urban Environmental Initiative (UEI), Contact: Stacey Johnson, Hartford City Program Manager, (617) 918-1552 or <http://www.epa.gov/region01/eco/uei/index.html>
 - Brownfields Program <http://www.epa.gov/region01/brownfields/index.html>
- U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, <http://www.epa.gov/swerosps/ej/index.html>
- Environmental Protection Agency, Office of Enforcement and Compliance Assurance <http://es.epa.gov/oeca/main/ej/index.html>
- EcoJustice Network <http://www.igc.apc.org/envjustice/>
- John Snow, Inc. <http://www.jsi.com/home.html>
- Pew Environmental Health Commission <http://pewenvirohealth.jhsph.edu/>
- Hartford Environmental Justice Network. Contact: Mark Mitchell, M.D., MPH, (860) 548-1133.
- Connecticut Coalition for Environmental Justice. Contact: P.O. Box 2022 Hartford, CT 06145-2022, phone (860) 548-1133, fax: (860) 548-9197, e-mail: M_MHC@msn.com
- ONE/CHANE. Contact: Larry Charles, Executive Director, 2065 Main Street, Hartford, CT 06120, phone (860) 525-0190, fax (860) 522-8266, lcharles@snet.net.

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